

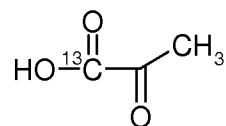
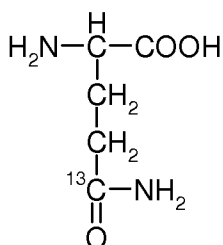
Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method of magnetic resonance imaging of a sample, said method comprising:
 - i) administering a hyperpolarised MR imaging agent in liquid phase comprising non-zero nuclear spin nuclei into the sample;
 - ii) exposing the sample to a radiation at a frequency selected to excite nuclear spin transitions in said non-zero nuclear spin nuclei;
 - iii) detecting MR signals from the sample and utilising spectral-spatial excitation, in combination with a FISP or PSIF pulse sequence with a flip angle of 45 to 90 degrees, where said MR imaging agent exhibits variations in relaxation time T2 as a result of physiological changes or as a result of metabolism in said sample; and
 - iv) ~~optionally~~ generating an image, physiological data or metabolic data from said detected signals.
2. Cancelled.
3. Cancelled.
4. Cancelled.
5. (Previously presented) The method as claimed in claim 1 wherein said non-zero nuclear spin nuclei are selected from the group consisting of ^1H , ^3He , ^3Li , ^{13}C , ^{15}N , ^{19}F , ^{29}Si , ^{31}P and ^{129}Xe .
6. (Previously presented) The method as claimed in claim 1 wherein said non-zero nuclear spin nuclei are selected from the group consisting of ^{13}C and ^{15}N .
7. (Previously presented) The method as claimed in claim 1 wherein said MR imaging agent is artificially enriched above natural abundance in the MR imaging nucleus.

8. (Original) The method as claimed in claim 6 wherein the MR imaging agent has an effective nuclei ^{13}C polarisation of more than 1%.
9. (Original) The method as claimed in claim 6 wherein the MR imaging agent is ^{13}C enriched at carbonyl or quaternary carbon positions.
10. (Original) The method as claimed in claim 9 wherein said ^{13}C enriched compound is deuterium labelled adjacent said ^{13}C nucleus.
11. (Previously presented) The method as claimed in claim 6 wherein said ^{13}C nuclei are surrounded by one or more non-MR active nuclei or entities selected from the group consisting of O, S, C, a double bond, and a triple bond.
12. Cancelled.
13. (Previously presented) The method as claimed in claim 1 wherein said imaging agent comprises a compound selected from pyruvate,



, and

14. (Previously presented) The method as claimed in claim 1 wherein said non-zero nuclear spin nuclei are ^{13}C nuclei.
15. (Previously presented) The method as claimed in claim 1 wherein the sample is a human or non-human animal body.
16. (Previously presented) The method of claim 15 wherein step iii) is carried out after the agent has left a vascular bed and wherein step iv) metabolic data are generated from said detected signals.